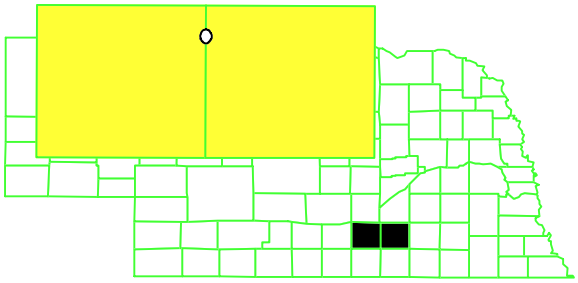
HASTINGS GROUND WATER CONTAMINATION

NEBRASKA

EPA ID# NED980862668



EPA Region 7

City: City of Hastings

County: Adams County and Clay County

Other Names: Blayney Ammunition Depot, Blayney ExNaval Ammunition Base, Hastings Plume, Former Naval Ammunition Depot (NAD)

SITE DESCRIPTION

Approximately 23,000 people live in the City of Hastings. Like most communities, industries have expanded to areas outside of the city limits. Farms and pastures surround the urban area, and many private and public wells lie within a 3-mile radius of the city. Ground water is used to irrigate crops and water stock and provides water for home and business use. A nearby stream and lake are used for recreation. Concerns regarding volatile organic compounds (VOCs), including commercial grain fumigants in the Hastings city water supply, were investigated by the State in 1983. As a result, Hastings took two municipal supply wells out of service and placed other contaminated wells on a standby basis. Community Municipal Services, Inc. (CMS), a private water supply system serving the areas east of Hastings, also took two of its three wells off-line due to pollution. Industrial solvent chemicals and commercial grain fumigants have migrated downward through the soils and are being carried by the ground water which flows generally to the east. Testing conducted by the City and the State assures that the water supplied to users by these two utilities is safe to drink.

The EPA designated the contaminated area as the Hastings Ground Water Contamination Site. The site includes properties within the central industrial area of the city of Hastings and properties situated at the eastern edge of the city limits. The Hastings site was placed on the National Priorities List in 1986.

The site has been divided into seven subsites for investigative and remediation purposes based on geographic and constituent source area characteristics. The seven subsites are: Well No. 3, Colorado Avenue, Second Street, North Landfill, FAR-MAR-CO, South Landfill and the Former Naval Ammunition Depot (NAD). The Adams county portion of the former NAD is known as the Hastings East Industrial Park. Cleanup of the former NAD is being addressed by the Army Corps of Engineers. The remaining subsites are being addressed by EPA under various

subsite-specific and “Area-Wide” actions.

To facilitate the management of investigation and response actions, the EPA has identified “Operable Units” for each of the seven subsites. Due to the size and complexity of the Hastings site, the following site description is organized into three geographic areas: Central Industrial Area; Commercial Area and closed city landfills; and Hastings East Industrial Park/Former Naval Ammunition Depot.

Central Industrial Area: This area encompasses commercial and industrial properties situated in the heart of Hastings, along the Burlington-Northern railroad right-of-way. The three subsites that make up this area are Well #3, Colorado Avenue, and Second Street. At the Colorado Avenue subsite, three different industrial solvents have been detected in soils.

The Well #3 subsite, named for M-3, one of the city wells taken out of service, is contaminated with carbon tetrachloride (CC14), a grain fumigant. A second plume of contaminated ground water containing chlorinated industrial solvents was identified by EPA's investigation and is being managed by a local manufacturing firm.

The major source of TCE contamination is attributed to the Colorado Avenue subsite. A vapor degreasing operation at the industrial facility located at 108 S. Colorado Avenue has been identified as the source of solvent releases to the environment during the 1960's and 1970's.

Contamination at the Second Street subsite was identified during the 1987 to 1988 investigation of Colorado Avenue. Pollution from an old coal gas plant operation was detected in the soil at this subsite and in the downgradient ground water. Contaminants include benzene, polycyclic aromatic hydrocarbons (PAHs), and phenols.

Commercial Area and Closed City Landfills: This area, situated at the eastern edge of Hastings, contains the North Landfill, FAR-MAR-CO and South Landfill subsites. Studies have revealed that the FAR-MAR-CO and North Landfill subsites are polluting downgradient wells with VOCs. The North Landfill originally was a local brickmaker's clay pit. Hastings operated it as a landfill in the 1960s to dispose of various municipal and industrial wastes.

Operators of the FAR-MAR-CO subsite stored and handled agricultural products, mostly grains, for more than 30 years. VOCs, including toxic grain fumigants, have seeped into the soils and ground water. Grain dust explosions and spills from fumigant equipment on the subsite have contributed to the problem. While investigating soils at the FAR-MAR-CO subsite, the EPA discovered trichloroethane (TCA) contamination on a portion now owned by a different company. TCA is a solvent used to clean metals. This area became known as the TCA Contamination Area, and was cleaned up by the new owner in 1989.

The South Landfill was operated by the City of Hastings during the 1960s and 1970s to dispose of municipal and industrial wastes. Sampling by EPA revealed the presence of TCE, PCE and vinyl chloride (VC) in the ground water. The subsite is bounded on the east by farmland. Also, the HEIP is located east of the South Landfill.

Hastings East Industrial Park/Former Naval Ammunition Depot (NAD):

The former NAD consisted of more than 72 square miles and was located 2 miles east of Hastings. This facility extends into Clay county and has been transferred to private parties and various government agencies. The 48,000-acre NAD was used for loading armaments until the early 1950s, and later for the demilling of armaments until it was decommissioned in the early 1960s. The U.S. Army Corps of Engineers is conducting studies at the site under the authorization of the Department of Defense (DOD). The major contaminants identified in the soils include volatile organic chemicals (VOCs), explosives and metals. Cleanup of the surface soil contamination on 2,600 acres of the HEIP has been completed by the Corps. Although contaminants that have been detected are generally consistent with the chemicals used by the Navy operations, the industries established in the Hastings East Industrial Park (HEIP) since the 1960s may have generated some of the VOCs being detected.

Site Responsibility:

This site is being addressed through Federal, State, local, and potentially responsible parties' actions.

NPL LISTING HISTORY

Proposed Date:	10/15/84
Final Date:	06/10/86
Deleted Date:	

THREATS AND CONTAMINANTS

Ground water and soils at the various subsites are contaminated with a wide range of VOCs and other organic compounds. The NAD site is contaminated with heavy metals and explosives in addition to VOCs, and the Second Street subsite also contains PAHs. The city and CMS water supplies are safe for drinking. However, people and livestock may experience adverse health effects from drinking contaminated ground water around the subsites from domestic wells located outside the city limits.

CLEANUP APPROACH

Response Action Status

To date, source control and ground water response actions have been initiated at Well No. 3, Colorado Avenue, Second Street and FAR-MAR-CO subsites. Additionally, the North Landfill clay cap was upgraded to act as a source control measure. In September 2000, the EPA selected a remedy at the South Landfill, but no action has been implemented yet. The ground water actions at Well No. 3 (plume 1), South Landfill, and FAR-MAR-CO have been designed to contain or monitor ground water concentrations that exceed maximum contaminant levels (MCLs) or, where there is no MCL for a constituent of concern (COC), the 1 x 10-6 (1 in

1,000,000) cumulative excess cancer risk level. The FAR-MAR-CO ground water action may have the effect of controlling the North Landfill plume, however more work is needed to determine this. The ground water response actions at Second Street and Colorado Avenue are being implemented as removal actions and an interim remedial action respectively. Both actions are designed to contain and treat ground water concentrations that exceed 1 x 10-4 (1 in 100,000) cumulative excess cancer risk.

The Well #3 Subsite is located in the Central Industrial area of Hastings. In 1989, EPA issued an Interim Action Record of Decision (ROD) selecting soil vapor extraction (SVE) as the technology to remediate the soils contaminated with Carbon Tetrachloride. EPA entered into Superfund State Contract (SSC), with the state of Nebraska and began full-scale soil remediation in July 1992. In July 1993, EPA and the state determined that remediation of the soils was complete. The state of Nebraska and EPA entered into a second SSC to provide a cost share for the ground water remediation. A modification to the second SSC allows the city of Hastings to enter into a Cooperative Agreement with EPA. The City of Hastings operates this ground water remediation system. The groundwater cleanup for Plume 1 began in 1995 with the installation of an air stripper to treat groundwater. EPA installed an irrigation system at a Hastings city park in the summer of 1998 for beneficial reuse of this extracted water (Operable Unit No. 13). Plume 2, was being addressed by Dutton-Lainson under an Administrative Order on Consent (AOC) to conduct a soil vapor extraction (SVE) removal cleanup. Removal activities began in March 1996. The AOC also required that Dutton-Lainson monitor groundwater for the Plume 2 contaminants on a quantity basis quarterly.

The Colorado Avenue Subsite is located in the central portion of the City. In 1988, the EPA issued an Interim Action Record of Decision (ROD) in which it selected soil vapor extraction (SVE) technology to cleanup approximately 800,000 cubic yards of contaminated soil. On September 28, 1990, after failing to negotiate an agreement to implement the (SVE) technology with the Colorado Avenue PRPs, EPA issued a Unilateral Administrative Order (UAO) to Dravo Corporation and Desco Corporation, the subsite PRPs, to construct and operate the (SVE) system. This UAO was subsequently amended on January 26, 1995 to add Eric Inc. The (SVE) system began operation in July 1996. In 1991, the EPA issued an Interim Action ROD to address the groundwater contamination. The 1991 ROD was amended in 1998 to allow the PRP's to perform the interim action utilizing newer technologies including air stripping and in-well-aeration (IWA). In 1999, the phase I and phase II treated wells were installed. The phase II treatment wells have been operating since December 1999 and are constructed utilizing the IWA design. A phase III Design is currently in preparation and is anticipated to also utilize IWA technology.

The Second Street Subsite is located at the eastern edge of downtown Hastings. The EPA completed an Action Memorandum (AM) for the Second Street subsite in 1995. The removal action defined by the AM was needed to remove benzene from soils and groundwater within the subsite boundaries. The EPA began construction at the subsite in 1996. Both treatment systems began operation in January 1997. Currently, the City is performing day-to-day operations at the subsite. Contaminated vapors from the SVE and groundwater air stripper are being treated using a catalytic oxidizer.

The EPA initiated a second Removal Action at the Second Street subsite in September, 2000. An

in-well aeration system is being installed to remove benzene and other volatile contaminants from the ground water.

Areas of groundwater contamination have been identified east of the locations of the two removal action treatment wells. The EPA is performing an RI/FS to determine what long term actions maybe necessary for the ground water.

The North Landfill Subsite is located east of the City and north of Highway 6. The City operated a municipal/industrial landfill from 1962-1964. In 1991, EPA issued an Interim Action ROD which addressed both source control and the groundwater contamination. In October 1992, the City and Dutton-Lainson entered into an Administrative Order on Consent (AOC) to perform the remedial design. The design for the source control operable unit was completed in 1996 and consisted of improving the landfill cap and restricting public access and future land use. In the fall of 1998, the PRPs begin construction of the landfill improvements. The landfill improvements were completed in the summer 1999. The design process for the groundwater operable unit has been suspended by the EPA while the City of Dutton-Lainson participate in a removal action for the downgradient groundwater operable unit at the FAR-MAR-CO Subsite. The groundwater contamination at the FAR-MAR-CO Subsite has been commingled with groundwater emanating from the North Landfill Subsite. Quarterly ground water monitoring has been conducted by the responsible parties and will be contained in a report due to EPA in 2002. This report will evaluate the performance of the FAR-MAR-CO system in capturing & containing the North Landfill plume.

The FAR-MAR-CO Subsite is located east of the North Landfill Subsite. On September 30, 1988, EPA signed a ROD selecting (SVE) treatment to address the source control. In September 1990, Farmland Industries, Inc. a former owner of the subsite, performed a pilot study of (SVE) to remove carbon tetrachloride and Ethylene Dibromide (EDB) from the soils. During the operation of the (SVE) pilot, over 1200 pounds of carbon tetrachloride and EDB were removed from the soils. In January 1992, Farmland agreed to design a full-scale (SVE) system. In August 1995, and Explanation of Significant Differences to the ROD was issued to extend the (SVE) operation to address the groundwater contamination as the source. Farmland and the current owner of the subsite, Cooperative Producers, Inc., have entered into a Consent Decree which requires that they perform source control using SVE. The Consent Decree was entered and Farmland began the full scale operation of the SVE system in July 1997. The SVE attained remediation goals in June 2000 and is now in the SVE plus phase which means the SVE system will continue to operate until June 2002. In 1987, during EPA's investigation of the carbon tetrachloride and EDB contamination at the subsite, a separate area of soil contaminated by 1,1,1-trichloroethane (TCA) was found at the subsite (Operable Unit No. 11). Pursuant to the AOC, in December 1989, HIPCO excavated approximately 43 cubic yards of soil and transported it to a permitted disposal facility. A ROD for the (TCA) Operable Unit was signed in September 1990 in which no further action was determined necessary to address the (TCA) contamination. EPA entered into an Administration Order on Consent (AOC) with Morrision Enterprises in June 1996 to perform a groundwater removal action. Construction and installation of the groundwater extraction system began in December 1996. Pumping of groundwater to control the carbon tetrachloride and EDB plume began in July 1997. EPA anticipates that it will take 15 years to restore the aquifer to MCLs. EPA will evaluate the performance of the system in 2002-2003.

The South Landfill Subsite is located in the southeast section of Hastings. During the 1960's and 1970's, municipal and industrial wastes were disposed at the landfill. EPA began field investigation in 1994 and confirmed the presence of industrial solvents in the landfill. EPA developed the Remedial Investigation report to document the investigation. The PRPs completed the FS under terms of an Administrative Order. The EPA completed a ROD for the subsite in September 2000. The selected remedy for the South Landfill includes upgrading the landfill cap and monitored natural attenuation for the ground water.

The Former Naval Ammunition Depot (NAD) is located in eastern Adam and western Clay counties and consists of approximately 48,000 acres. The contaminants of concern are volatiles (VOCs), heavy metals, polynuclear aromatic hydrocarbons (PAHs) and explosives. The Corps of Engineers (COE) an agent for Department of Defense (DOD) has conducted or began the following cleanups: The COE completed in June 1995, a time-critical removal action to excavate two manholes, a catch basin, piping and contaminated soils, sludges and liquids for Operable Unit No. 8; a full-scale pilot system, incorporating air sparging via horizontal and vertical wells went on line in January 1995 (Operable Unit No. 14). The pilot was successful and is currently continuing as a removal action; the COE completed construction July 1998 of a soil repository (Operated Unit No. 4). Major components of the construction include excavation of low-levels of contaminated soils and incineration of excavated soils containing high levels of explosives and PAHs; construction of (SVE) systems began in October 1996 for buildings 104 and 135 areas to cleanup the soil contaminated with VOCs. SVE systems have been designed for Phase 2 to address the contaminated soil at building 130, South Disposal Area and Naval Yard Dump. The COE completed a draft remedial investigation report which addresses other areas of the NAD suspected to be contaminated and the contaminated groundwater beneath the subsite.

Area-Wide Hastings Site activities have continued to support identification of a remedy for the City Subsites (i.e., the six non-NAD subsites). The EPA completed a Remedial Investigation (RI) report which addresses the area-wide groundwater contamination for the City Subsites. The RI report included a risk assessment prepared by the Nebraska Department of Health to determine the risks associated with contamination in the aquifer underneath the City of Hastings. In 2000, the PRPs prepared the Area-Wide FS under the terms of an Administrative Order. The Area-Wide FS was needed to evaluate site-wide environmental conditions taking into account the completed and proposed remedial measures for the various City Subsites. The purpose of the FS was to integrate the information collected at each subsite into a comprehensive document and evaluate remedies designed to protect potential receptors from unacceptable risks posed by ground water. The EPA, in consultation with the NDEQ, prepared a Proposed Plan in early 2001 to support preparation of a ROD for the City Subsites.

Site Facts:

ENVIRONMENTAL PROGRESS

Due to the numerous cleanup actions and the number of contaminated areas and subsites at the Hastings Ground Water site, the status of cleanup activities varies. The ground water actions will be long-term. In general, however, the potential for exposure to hazardous substances in the ground water has been greatly reduced by closing down contaminated wells while further studies and cleanup activities are being planned and conducted. Further contamination of the ground water is being prevented by the EPA and other parties' efforts to clean up the sources of contamination. The EPA continues to monitor the quality of the ground water adjacent to the Hastings site, and informing property owners and businesses when contaminant levels exceed acceptable limits. The EPA, the NDEQ and the potentially responsible party group are applying the Superfund process to determine acceptable actions to manage contamination associated with the Hastings Site.

SITE REPOSITORY

Hastings Public Library, Fourth and Denver Streets, Hastings, Nebraska 68901

In addition, the Central Community College Library, E. U.S. Highway 6, Hastings, NE 68901 contains some documents.

Superfund Records Center
901 N. 5th St.
Kansas City, KS 66101
Mail Stop SUPR
(913)551-4038

REGIONAL CONTACTS

SITE MANAGER:	Darrell Sommerhauser
E-MAIL ADDRESS:	sommerhauser.darrell@epa.gov.
	(913) 551-7711
COMMUNITY INVOLVEMENT COORDINATOR:	Diane Huffman
PHONE NUMBER:	913 551-7544
PUBLIC INFORMATION CENTER:	
E-MAIL ADDRESS:	
STATE CONTACT:	Mike Felix
PHONE NUMBER:	402 471-3388

MISCELLANEOUS INFORMATION

STATE:	NE
	07S2
CONGRESSIONAL DISTRICT:	03
EPA ORGANIZATION:	SFD-SUPR/IANE

MODIFICATIONS